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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
ROBINSON, LAUREN E	

ART UNIT	PAPER NUMBER
1784	

NOTIFICATION DATE	DELIVERY MODE
09/17/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/562,222	SCHICHT ET AL.	
	Examiner	Art Unit	
	LAUREN ROBINSON	1784	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1, 7-8, 12-14, 16-21 and 23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 7-8, 12-14, 16-21 and 23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

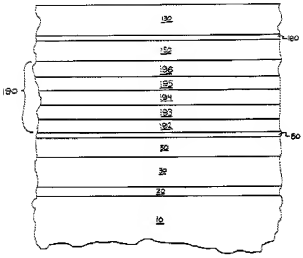
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1, 7, 13-14, 16, 12, 17-21 and 23 are rejected under 35 U.S.C. 102(a and e) as being anticipated by, or in the alternative under 35 U.S.C. 103(a) as being obvious over, Hartig et al. (US Pub 2003/0165693).

Regarding claims 1 and 21: Hartig et al. teach a composite product comprising a transparent substrate and a multilayer system provided below.

Figure 1



The multilayer system comprises a functional layer 50 (0040, 0052-0053, 0055-0056, 0087), a silicon nitride containing layer ("layers 30, 190, 192, 193, 194, 195 and/or 196", 0051, 0065-0072) corresponding to applicants' layer C, and outermost layer 130 (0081). The multilayer is a low e coating (0002, 0018) meeting the solar control and/or energy control functions and the functional layer is infrared reflecting (0053).

The outermost layer can consist of a single dielectric film and suitable dielectrics for the outermost layer are silicon nitride, oxides of zinc, titanium, hafnium, zirconium, etc. and alloys and mixtures thereof (0081, 0083). While Hartig does not provide an explicit example using a mixture of zirconium oxide with another metal as the single material layer and instead, "prefers" silicon nitride or titanium nitride, Hartig's listing is

clearly teaching with sufficient specificity that a mixture of zirconium oxide with another metal is suitable.

In the instance a mixture of zirconia with another metal oxide is not considered taught with sufficient specificity, Hartig's listing clearly provides suggestion to use a mixture of metals including Zr and at least one other metal. It would have been obvious to one having ordinary skill in the art at the time of invention to use an oxide comprising a mixture of zirconium with another metal to obtain a suitable dielectric cover layer.

Regarding claim 21, in order for the layers to be present, a process of applying said layers would be necessarily present. The limitation of the process for "improving mechanical resistance" is intended use as it does not impart structure to the claimed invention. As Hartig's process of producing the structure and the structure itself is the same as claimed, Hartig is expected to be capable of improved mechanical resistance. However, Hartig also clearly teaches producing the system for mechanical durability (0002-0016).

Regarding claims 7 and 23: Hartig teaches a single layer material selected from oxides of zinc, titanium, hafnium, zirconium, etc. and mixtures thereof allows for mixtures of zinc oxide and zirconium oxide. While Hartig does not provide an explicit example using this mixture, as Hartig's listing is limited to a select few metals, Hartig is considered to teach with sufficient specificity a mixture of ZnZrOx is suitable. In the instance a mixture of zirconia with zinc oxide is not considered taught with sufficient specificity, Hartig's listing clearly provides suggestion to use the claimed mixture. It would have been obvious to one having ordinary skill in the art at the time of invention

to use a mixture of zirconia with zinc oxide (ZnZrOx) to obtain a suitable dielectric cover layer.

Regarding claim 13: Hartig teaches that layer 190 comprising Si3N4 (layer C) also comprises ZnO (0066-0072) meeting the limitation of layer C comprising an additional metallic element (ie: Zn).

Regarding claims 14 and 16: The layer comprising Si3N4 (layer C) can have a thickness of 5 to 20nm, 10 to 14nm, 13.4 to 17.4nm, 11 to 15nm, and even 11.7 to 15.7nm (0066-0072) all falling within applicants' range. Hartig's functional layer is metallic Ag (0053).

Regarding claim 18: Hartig teaches the sequence,

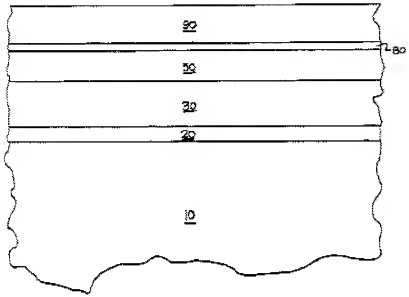
layer 30/Ag layer 50/ ZnO layer 192/Si3N4 layer 193/cover layer 130

The first layer 30 comprises Si3N4 with ZnO thereon (0051) meeting applicants' sequence.

Regarding claims 19 and 20: The composites of Hartig preserve properties upon heating (0001-0016) and form a glazing assembly (0001-0016).

Regarding claim 12: Hartig also teaches the following composite.

Figure 6



Layers 30, 50, etc. can be the same as the embodiment discussed above for Figure 3 (0087). Therefore, the multilayer structure includes a layer 30 with sufficient specificity to comprise Si3N4 (layer C) with layer 50 being a functional infrared reflecting layer. Layer 90 can comprise an outermost layer having a thickness of less than 15nm (0089)

While Hartig teaches an example, and "prefers", the outermost layer being silicon nitride (0089) and not zirconium oxide with another metal, Hartig clearly teaches that the outermost layer can be an oxide of zinc, zirconium, titanium, etc. and mixtures or alloys thereof (0088). As Hartig's listing is limited to a select few metals, Hartig is considered to teach with sufficient specificity a mixture of an oxide of zirconium with another metal

being suitable as the outermost layer (cover layer) having a thickness of less than 15nm.

In the instance a mixture of zirconium oxide with another metal is not considered taught with sufficient specificity, Hartig's listing clearly provides suggestion to use the claimed mixture. It would have been obvious to one having ordinary skill in the art at the time of invention to use a mixture of zirconium oxide with another metal to obtain a suitable outermost cover layer with less than 15nm thickness.

Regarding claim 17: The composite has a final sequence of layers in Layer 90 above including oxide/silicon nitride/ oxide (0089).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 8 is rejected under 35 U.S.C. 103(a) as being obvious over Hartig et al. (US Pub 2003/0165693) as applied to claim 1, in view of Anderson et al. (US Pub. No. 2001/0031365).

Hartig fails to teach the oxide layer of zirconium with another metal (cover layer) is doped with one of the claimed elements.

Anderson et al. teach a transparent substrate with a solar control multilayer stack applied thereon (title). Anderson et al. teach that metal oxide layers, such as zinc oxide,

can be doped with metals including Al, etc. to provide additional antistatic properties desirable in the art (0054).

Hartig and Anderson disclose analogous inventions related to solar control stacks on transparent substrates. As Anderson teaches that oxides including zinc, etc. can be doped with aluminum for desirable antistatic properties, one having ordinary skill would have found it beneficial to dope oxides, such as Al to zinc oxide in Hartig's listing, to obtain antistatic results. It would have been obvious to one having ordinary skill at the time of invention to include Al dopants, etc. with the oxides of Hartig to obtain antistatic properties.

Response to Arguments

Applicant's arguments filed June 28, 2010 have been fully considered but they are moot in view of new grounds of rejection. The claims were amended to recite that the "cover layer formed from a single material" necessitating the new rejection.

Conclusion

.Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LAUREN ROBINSON/
Examiner, Art Unit 1784

/Jennifer C McNeil/
Supervisory Patent Examiner, Art Unit 1784